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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,029	07/25/2003	Takaaki Nonaka	JP920020094US1	3361
25259	7590	01/10/2008		
IBM CORPORATION 3039 CORNWALLIS RD. DEPT. T81 / B503, PO BOX 12195 REASEARCH TRIANGLE PARK, NC 27709			EXAMINER FLEISCHER, MARK A	
			ART UNIT 4143	PAPER NUMBER
			NOTIFICATION DATE 01/10/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

RSWIPLAW@us.ibm.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/628,029	<b>Applicant(s)</b> NONAKA, TAKAAKI	
	<b>Examiner</b> Mark A. Fleischer	<b>Art Unit</b> 4143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 1, 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1-25 July 2003; 2-27 March 2006</u> .                         | 6) <input type="checkbox"/> Other: _____                          |



## DETAILED ACTION

### Status of Claims

1. This action is in reply to the application filed on 25 July 2003.
2. Claim 1-15 are currently pending and have been examined.

### ***Request for Information Under 37 CFR § 1.105***

3. 37 CFR 1.105. Requirements for information.

(a)

(1) In the course of examining or treating a matter in a pending or abandoned application filed under 35 U.S.C. 111 or 371 (including a reissue application), in a patent, or in a reexamination proceeding, the examiner or other Office employee may require the submission, from individuals identified under § 1.56(c), or any assignee, of such information as may be reasonably necessary to properly examine or treat the matter, for example:

- (i) Commercial databases: The existence of any particularly relevant commercial database known to any of the inventors that could be searched for a particular aspect of the invention.
- (ii) Search: Whether a search of the prior art was made, and if so, what was searched.
- (iii) Related information: A copy of any non-patent literature, published application, or patent (U.S. or foreign), by any of the inventors, that relates to the claimed invention.
- (iv) Information used to draft application: A copy of any non-patent literature, published application, or patent (U.S. or foreign) that was used to draft the application.
- (v) Information used in invention process: A copy of any non-patent literature, published application, or patent (U.S. or foreign) that was used in the invention process, such as by designing around or providing a solution to accomplish an invention result.

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- (vi) Improvements: Where the claimed invention is an improvement, identification of what is being improved.
  - (vii) In Use: Identification of any use of the claimed invention known to any of the inventors at the time the application was filed notwithstanding the date of the use.
  - (viii) Technical information known to applicant. Technical information known to applicant concerning the related art, the disclosure, the claimed subject matter, other factual information pertinent to patentability, or concerning the accuracy of the examiner's stated interpretation of such items.
4. This is a request that applicants provide the information identified above especially where emphasis is added. If applicants have this information, then applicants are required, under the provisions of 37 CFR 1.56, to disclose the information to the Office.
5. Applicant is not required or being asked to conduct a search for information beyond applicants own immediate files. If Applicant does not have immediate knowledge of the information requested, then a statement that the information sought is unknown or not readily available to the Applicant will be accepted by the office as a complete reply.
6. **Why the Request for Information is Reasonably Necessary:** Applicant/Assignee International Business Machines (hereinafter IBM) is in the business of producing workflow management systems software. Although an IDS has been submitted, IBM likely possesses additional knowledge reasonably pertinent to the examination of this application. If so, please send only relevant and pertinent information to the Examiner. Specifically, please send the Examiner information relating to the software product trademarked "**FormWave**". IBM has noted in the background of the specification that the invention is embodied in the software product trademarked by **FormWave** and further, that non-patent literature as noted in this response suggests the invention's commercial use more than a year prior to applicant's filing date. Consequently, the Examiner needs to ascertain whether the material requested discloses and/or describes the invention claimed and the date in which the aforementioned software product was described.

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7. **Information Requested of Applicants:** If Applicant possesses any of the information above, Applicant is required to send: publications of pertinent information as well as the dates of the aforementioned information.

### ***Drawings***

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(1) because they include reference sign(s) "used in association with brackets" and repeat the same signs for different tables of data as in figures 3, 4, 7, 8, 9, 10, and 12 which leads to confusion. Moreover, figures 3, 4, 7, 8, 9, 10, 11, 12, and 19 do not contain proper labels of elements mentioned in the description: in paragraphs [0046-50]. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

9. The use of the trademark "FORMWAVE" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.
10. The disclosure is objected to because of the following informalities. Appropriate correction is required.

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- [0004] the phrase “commonly use” is unclear; the sentence with “...on currently circulated matter...” should be at least “...on a currently circulated matter...” Sentences in this paragraph are unclear and verbose.
- [0005] the phrase “to give approval” is unclear. The last sentence is redundant: “...require repetition of the same work multiple times...”
- [0006] “Further, Suppose...” should be “Further, suppose...” The text “...(when work defined to be treated the same as the work on the first node is applied even if the same work is not applicable)...” is unclear. The sentence “Therefore, if fields to which reference or ...” should read “Therefore, if fields to which reference is made or...” This sentence also uses terms “post to post” which are unclear and undefined and inconsistent with standard practice in the art. In addition, this paragraph refers to “proposed” work, but **does not include a citation or reference** to this work thereby precluding a complete and thorough examination of the instant application.
- [0008] “In attaining the object and ...” seems to refer to the ‘object of the invention’, but use of this term is nevertheless unclear. The phrase: “...allow the participant to complete work at a time instead of repeating the same work multiple times...” (emphasis added) is grammatically incorrect and redundant. The last sentence of this paragraph also needs rephrasing.
- [0009] “When a form to be circulated in the workflow reaches the first one of the multiple nodes to be processed by one participant, the workflow server may consolidate information necessary for the participant's determination and send the consolidated information to the operating computer terminal.” This sentence needs to be re-written as it is unclear whether the form is being processed or the node is being processed. Other aspects are also unclear and confusing such as the notion that the work to be input on the form *is* a node in the workflow.
- [0010] “The workflow server includes storage means for storing the definition of nodes assigned to respective participants performing a workflow, consolidation...” This is a run-on and incomprehensible sentence and needs to be re-written. The phrase “performing a

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workflow” is misleading. Also, the phrase “...is connected with...” should read “...is connected to...”

- [0011] The term “consolidation range” is undefined and unclear in its meaning.
- [0012] The Examiner interprets the sentence “...workflow engine connected with multiple computer terminals...” to read “...workflow engine connected to multiple computer terminals...” (emphasis added) and should be corrected.
- [0013] The sentence containing “...if one of routes determined for respective work...” is missing the word ‘the’ and should be corrected. The words ‘respective work’ are unclear. This entire paragraph must be re-written as it is incomprehensible.
- [0014] In the first sentence, the phrase “in a workflow” appears to improperly placed and should be moved or deleted in order to clarify the meaning of the sentence.

11. Other examples of unclear and inexact or misleading terms or sentence structure or phrasing are:

- [0017] “The programs may be preinstalled in the workflow engine as the computer before the workflow engine is delivered to a customer, or may be distributed in the form of a storage medium containing the programs readable by the computer to execute the programs.”
- The terms “worker” and “participant” appear to be used interchangeably thereby causing unnecessary confusion.
- In [0067] the term “node(s)” appears to be synonymous with the term “activities”. It also seems to be used interchangeably with ‘processor’ or ‘terminal’ or ‘application’ or ‘task’ or ‘form’ and is inconsistent with standards in the workflow process arts. Notwithstanding paragraph [0011] where the term is described, its use is inconsistent thereby adding to unnecessary confusion.
- [0067] The phrase: “...can complete his or her work at a time” is confusing and grammatically incorrect.

12. The specification also lacks a clear and concise definition of terms that would facilitate review.

Applicant is required to submit an amendment which clarifies the disclosure so that the examiner may make a proper comparison of the invention with the prior art. Applicant should be careful not



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to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed). A shortened statutory period for reply to this action is set to expire ONE MONTH or THIRTY DAYS, whichever is longer, from the mailing date of this letter.

### ***Claim Objections***

13. Claims 1 and 9 are objected to because of the following informalities: In claim 1, the text indicates that a "server is connected with [ ] terminals through" and should read "is connected to [ ] terminals in..." In claim 9, the limitation contains the phrase: "...if one of routes..." should read "...if one of the routes..." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 3, 5, 8, 9, 10, 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
16. In claim 3, the claim limitation states that *the operating computer terminal sends said workflow server results of work performed by the participant based on...* While the limitation expresses what type of information is sent (the 'results of work...'), it does not indicate where this information is sent. Examiner believes that this is merely a grammatical error; however, as this claim is presently worded, it is vague and indefinite.
17. Claims 5, 8, 9, 10, 12 and 13 contain the phrase *work items selectable*. There is insufficient antecedent basis for this limitation in the claim. Moreover, neither the claims nor the specification defines what this phrase means. In addition, the manner in which these words are used is not standard in the workflow management arts. Although one piece of prior art cited herein (Deborin page 463) uses the phrase "selected work item" (see also the rejection of claim 15 herein), in the

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context that it is used the meaning is plain. In the instant claims however, it is unclear what the term *selectable* precisely means. For example, does it refer to work items that the 'participant' is capable of selecting, or must select, or will select? Or does it refer to the workflow server that selects (determines) the work items before or after task consolidation or a particular worker with certain access permissions? Does it refer to work items that will be performed in the future? Because all of these claims use this vague and indefinite term and it lacks sufficient antecedent basis, these claims must be rejected.

18. Claim 9 contains the phrases in its single limitation: "of one of routes ..." and later "said consolidation range determining means determines the other routes contained in the one route" lack sufficient antecedent basis for this limitation in the claim. See also the objections to this limitation above.

#### ***Claim Rejections - 35 USC § 102***

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

20. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Bandat *et al.* US 6816902 B1.
21. **Examiner's Note:** The Examiner has pointed out particular references contained in the prior art of record within the body of this action for the convenience of the Applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply. Applicant, in preparing the response, should consider fully the entire reference as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.
22. Bandat, as shown, discloses and/or describes the following limitations in claim 1:

**Claim 1:**

- *A workflow system comprising* (Bandat's invention is entitled: "Method and system for improving **workflow** performance in **workflow** application systems" where a "workflow application system" is a 'workflow system');
- *operating computer terminals executing a workflow* (See at least Bandat [0029]: "communication between the central server and client workstations..." is described. Workstations are equivalent to 'operating computer terminals'); *and*
- *a workflow server connected with said operating computer terminals through a network to manage the workflow, wherein said workflow server consolidates information necessary for processing multiple consecutive nodes to be processed by one participant operating one of said operating computer terminals and sends the consolidated information to the operating computer terminal* (See at least Bandat [abstract]: "The invention identifies areas in a **workflow** graph that operate on one workstation—islands that can execute also remote from a central **workflow** server." Emphasis added. See also Bandat [0033]: "Islands are parts of the **workflow** which are best to be described with the help of a **workflow** graph. They are comprising connected sub-parts of a **workflow** graph according to the following rules: (34) An island is formed by an aggregation of activities associated with the same physical or logical location attributes." The term 'islands' thus corresponds to a set of activity nodes and 'aggregation' corresponds to the 'consolidation' of these activity nodes. This consolidation necessarily involves the information associated with the several activities and, ipso facto, must also be consolidated in order to consolidate (aggregate) activities. In addition, see at least Bandat [0013]: "This implies that islands on one workstation can be executed consecutively by different user-names or user-roles, where one person may also act in different user roles." Note that "one person" corresponds to a 'participant' in the instant claim. In Bandat [0015]: "The island object contains the information which can optionally be downloaded to a physical workstation where the island can be executed." It is plain from the context that the element that *sends* corresponds to a server that *sends the consolidated information* to the *operating computer terminals*.)

***Claim Rejections - 35 USC § 103***

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966),

that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

25. Claims 2, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bandat as applied to claim 1 above, and further in view of Deborin, *et al.*.

**Claim 2:**

- *The workflow system of Claim 1, wherein when a form to be circulated in the workflow reaches a first one of the multiple nodes to be processed by the participant, said workflow server consolidates information necessary for the participant's determination and sends the consolidated information to the operating computer terminal (see at least Deborin, et al. page 12: "The BPM Server Repository is a content management solution that [ ] consolidates, and provides centralized storage of business process models, enterprise data and other corporate information."* The "BPM Server" corresponds to the *workflow server*. Deborin, *et al.* on page 110 further refers to the term 'participant': "A role is a participant that performs a task in an organization's process []." Deborin, *et al.* further teaches on page 248: "The following steps must be completed: Consolidate Tasks performed by the same role into a single activity." Emphasis added. Thus, the term *multiple nodes* in the claim is equivalent to several tasks being performed by a single

participant; hence, Deborin, *et al.* teaches that information pertaining to multiple tasks is consolidated and performed by a single participant for his/her *determination*. Finally, in at least Deborin, *et al.* on page 19 the phrase “Data can be routed to different applications, based on data values and rules encoding the way the enterprise conducts its business. The applications may be on different systems, running on different computers and different operating systems” is equivalent to the phrase in the limitation *and sends the consolidated information [ ] to the operating terminal*. Moreover, it is well-established in the computer networking arts and present in the instant application that client/server architectures involve information (consolidated or not) that is sent from a server to a client (and *vice versa*) which, in this case, is equivalent to an *operating computer terminal*. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the teachings of Bandat per claim 1 with that of Deborin, *et al.* because incorporating the acts of data and task consolidation into a workflow system leads to potential increases in efficiency of workflow management systems.

**Claim 3:**

- *The workflow system of Claim 1, wherein the operating computer terminal sends said workflow server results of work performed by the participant based on the information sent from said workflow server.* For purposes of this examination, the Examiner interprets the phrase: *...sends said workflow server results...* to be read as ‘sends to said workflow server results...’ As noted in claim 2 above, it is well-established in the computer networking arts and in the present disclosure that client/server architectures typically involve client transmissions of data to a server. Moreover, Deborin, *et al.* in at least page 25 describes this in the context of workflow management systems: “Workflow server performance and reliability [ ] requires the concentration of incoming workflow client messages into a bigger data stream prior to being directly sent to the workflow server.” Emphasis added. Finally, Deborin, *et al.* on page 21 specifically refers to processed information sent from a client (read ‘operating computer terminal’) to a server: “Clients are responsible for executing the program activities that interact with users. Clients are also responsible for giving users access to the workflow management system, that is, access work

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items, access running processes, and monitor processes. The communication with servers is through MQSeries, using the client message layer of MQSeries Workflow.” Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the teachings of Bandat and Deborin, *et al.* because communication between clients and servers in workflow management systems pertaining to processed information provides the capability for greater control of information processes and can improve the efficiency of workflow management systems.

**Claim 4:**

- *A workflow system according to claim 3, wherein said workflow server performs individual processing on each of the multiple nodes based on the results of work performed by the participant and sent from the operating computer terminal to advance the workflow* (See at least Deborin page 22: “The server components coordinate and manage an MQSeries Workflow system and its clients.” As noted above in claims 2 and 3, it is well-established in client/server architectures as in the disclosure of the instant application that communication and processing occur on both the client-side and server-side in such systems. Moreover, in Bandat the workflow server “Those parts, called “islands” can be interpreted or executed on the central **workflow** server...” As noted in the rejection of claim 1, ‘islands’ are formed “by an aggregation of activities associated with the same physical or logical location attributes.” Emphasis added. Hence, the aggregation of activities corresponds to *multiple nodes* that are executed (processed) on a workflow server. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the teachings of Bandat and Deborin, *et al.* because it is basic in the networking arts for servers to process information sent from clients (operating computer terminals) and since clients process consolidated information corresponding to *multiple nodes*, it is all the more obvious that any workflow system would benefit from server-side processing of work performed on a client when that involves use of consolidated information.)
26. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deborin and further in view of Dewan (*Workflow Redesign...*).

**Claim 5:**

27. For purposes of the examination of claim 5, Examiner interprets the term *work items selectable* to mean work items that a participant is capable of performing. Deborin, *et al.* discloses and/or describes the following limitations:

- *A workflow server connected with multiple computer terminals to manage a workflow comprising* (See at least Deborin page 17: “MQSeries Workflow is a client/server system and there are dedicated client and server components that are responsible for the different workflow management tasks.”)
- *means for storing a definition of nodes assigned to respective participants performing a workflow* (See at least Deborin page 17: “Business activities and data are depicted in Buildtime. The people that perform them and the local or client/server programs that support the people are also defined. [ ] All of this modeling information is then stored in the database of MQSeries Workflow Buildtime.” Emphasis added. Again, in the instant application “activities” is equivalent to nodes, “modeling information” corresponds to the *definition of nodes*, and “people that perform them” corresponds to *participants performing a workflow*.);

28. Deborin does not specifically show the following limitation, but Dewan, *et al.* as shown does.

- *means for determining a range of consolidating multiple consecutive nodes to be processed by one participant in the workflow* (See at least Dewan [abstract]: “...a new methodology that helps system designers determine the optimal set of tasks to be consolidated. [ ] Optimal design insights are obtained for both sequential and generic process structures.” In Dewan, “new methodology” corresponds to the *means for* in the instant case and the term “sequential” corresponds to a set of *consecutive nodes*. See also Dewan page 289: “In a sequential process, every task is on the critical path...” Examiner notes that not every subset of *consecutive nodes* would be on a critical path (as in PERT/CPM formulations), but it would be obvious to those skilled in the art at the time of the invention utilize this same methodology to consolidate consecutive nodes that are not necessarily on a critical path in addition to those that are. As Dewan in at least page 289 further notes: “Most results obtained under sequential formulation are

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applicable to more generic cases..." (emphasis added) and therefore applicable to situations where consecutive nodes in a workflow graph are not on a critical path. Finally, the consolidations described in Dewan page 286 pertain to tasks performed by a single person (read *participant*): "When the processing task and the controlling task are combined, the same person becomes responsible for both tasks." Emphasis added.);

29. Deborin, *et al.* discloses and/or describes the following limitations:

- *means for acquiring from said means for storing work items selectable for each node within the consolidation range determined by said means for determining a range of consolidation* (See at least Deborin page 18: "For every process instance, the server components of MQSeries Workflow navigate through the process and assign the work to the right person in the right sequence. [ ] Activities that need to be performed appear in worklists of the assigned users. When a staff member selects, for example, a program activity, the program attached to this activity is started with the necessary information. User worklists contain continuously updated overviews of pending activities." The act of 'updating' corresponds to the *means for acquiring* since this involves communication between client and server. The *work items selectable for each node* corresponds to "user worklists". Examiner further notes that Deborin generally describes the practice of a workflow server providing the *means for acquiring* information to be tasked to clients in a workflow system. See for example Deborin in at least page 17: "MQSeries Workflow is a client/server system and there are dedicated client and server components that are responsible for the different workflow management tasks."); and

30. Deborin does not specifically show the following limitation, but Dewan, *et al.* as shown does.

- *means for consolidating the work items acquired by said means for acquiring to provide the participant with consolidated information* (As shown above in the rejection of an earlier limitation of the instant claim, Dewan describes a methodology for consolidating work items and therefore corresponds to *means for consolidating the work items*).

31. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the teachings of Deborin and Dewan and utilize the methodology in Dewan



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as a means for determining nodes (tasks) for consolidation in conjunction with the workflow system using a client/server type architecture as described in Deborin because it can improve the efficiency of workflow management systems.

**Claim 6:**

32. Deborin, *et al.* as shown discloses and/or describes the following limitations:

*A workflow server according to claim 5, wherein:*

- *the definition of nodes includes information relating to access permission to each field at each of the nodes* (See at least Deborin page 510 which discusses "authorization rights...you can define a category for these processes [and] who is authorized for a certain process category..." The text further describes how these rights are "represented by the Function object in BPM Workbench." Here, a "function object" corresponds to a *definition of nodes*); *and*

33. Deborin, as shown, describes some aspects of the following limitation and Dewan also shows aspects of the following limitation:

- *said workflow server further comprises highest-level access permission acquiring means for acquiring from said storage means the highest level of access permission to each field within the consolidation range determined by said consolidation range determining means* (Deborin as shown in the rejection of the previous limitation describes the system elements that help manage authorization rights for a certain process category. This rights management component is part and parcel of the workflow management system described in Deborin that necessarily involves components that provide storage means and acquiring means. The aspects of the consolidation of tasks are described in Dewan as shown in the rejection of claim 5. Thus, given a set of fields which are data entry elements, hence part of a process, the "Category in Buildtime" can allow the user of the system to "manage authorization rights for Runtime...")

34. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to use the access rights management system component and category definitions (for nodes) as shown in Deborin in conjunction with the process results from application of the methodology of Dewan for the consolidation of tasks to improve the utility of task consolidation

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because access restrictions to various fields for a participant to process improves the security of a workflow management system as well as its functionality and utility.

35. Deborin, *et al.* as shown discloses and/or describes the following limitations:

**Claim 7:**

*A workflow server according to claim 6, wherein:*

- *said means for storing stores a layout definition of a form used for time of one participant's continuous activities* (Deborin page 353 describes "With this tool, you can create JSP layout skeleton files for use with the MQSeries Workflow Web Client [ ]" wherein the "skeleton files" are stored in the "BPM Workbench" that is integrated with the BPM Server that constitute the MQSeries Workflow.); *and*
- *providing means provides the participant with a form formatted based on the form layout definition acquired from said means for storing and a field access permission acquired from said highest-level access permission acquiring means* (As shown in the rejection of claims 5 and 6 above, and further by Deborin as shown, integral components in workflow management systems are servers which constitute the *providing means* in that they transmit information regarding form formatting and layout. Deborin page 353 states: "The tool enables you to create a JSP file for each program activity, including the putting and setting of fields corresponding to the data structure of each activity.")

36. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to incorporate the teachings of Deborin as it describes how form information is transmitted to clients and thus, renders workflow management systems more useful in a corporate setting.

**Claim 8:**

37. For purposes of the examination of claim 8, Examiner interprets the term *work items selectable* to mean work items that a participant is capable of performing. Deborin discloses and/or describes the following limitations:

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- *A workflow engine connected with multiple computer terminals to manage a workflow comprising* (See at least Deborin page 17: “MQSeries Workflow is a client/server system and there are dedicated client and server components that are responsible for the different workflow management tasks.”);

38. Deborin does not specifically show the following limitation, but Dewan, *et al.* as shown does.

- *consolidation range determining means for determining a range of consolidating multiple consecutive nodes to be processed by one participant in the workflow* (See the rejection of the limitation *means for determining a range...* in claim 5);

39. Deborin, as shown discloses and/or describes the following limitation:

- *access permission setting means for setting access permission to each field at each node within the consolidation range determined by said consolidation range determining means* (See the rejection of the first two limitations in claim 6 and in Deborin on page 510);
- *selectable work acquiring means for acquiring work items selectable for each node within the consolidation range determined by said consolidation range determining means* (See the rejection of claim 5 and the limitation therein ‘*means for acquiring*’ and Deborin page 18);
- *form generating means for generating a form based on the access permission set by said access permission setting means and the work items acquired by said selectable work acquiring means* (See the rejection of the first limitation of claim 7 above. Also see Deborin page 353 which refers to system components that generate Java Server Pages which correspond to a *form*); *and*
- *form sending means for sending the participant the form generated by said form generating means* (See the rejection text in the previous limitation. Further, note that a ‘server’ sends information such as a *form*, but is equivalent to *providing*, *i.e.*, *form sending means* and the *providing means* stated in claim 7 are equivalent).

40. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the access permission setting means, the selectable work acquiring means, the form generating and sending means described in Deborin with the consolidation determining

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means of Dewan because access restrictions to various fields in consolidated tasks improves the security of a workflow management system as well as its functionality and utility.

41. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's

Background and further in view of Dewan (*Workflow Optimization...*).

42. For purposes of the examination of claim 9, Examiner interprets the terms *work items selectable* to mean work items that a participant is capable of performing.

**Claim 9:**

43. Applicant and Dewan, as shown, disclose and/or describe the following limitations:

*A workflow engine according to claim 8, wherein*

- *when there are multiple work items selectable for a certain node, if one of routes determined for respective work items contains all other routes, said consolidation range determining means determines the other routes contained in the one route as the consolidation range* (See the Background of the instant application in paragraphs [0003] and [0006]. In [0003] Applicant states: "To offer a solution to this problem, "FormWave" [ ] is now commercially available from IBM capable of easily designing and managing a complicated workflow process. "Formwave" uses a workflow engine to establish and manage a complicated route in a series of activities from fill-in of a form to approval and data storage of the form in each of various applications and business approval processes." Emphasis added. In [0006] Applicant states: "...if work on the first node can be adopted for the following nodes, that is, if work on the first node is also applicable to the following nodes (when work defined to be treated the same as the work on the first node is applied even if the same work is not applicable), it can be presumed that the work on the first node will be performed on the following nodes. Such a processing method has already been proposed." Emphasis added. Moreover, Dewan on page 3 describes the method of consolidating tasks and using task numbers to establish what amounts to a *consolidation range*: "Pair-wise consolidations can represent consolidation of more than two tasks. For example, consolidating tasks 6, 7 and 8 can be represented as consolidating tasks 6 and 7 and tasks 7 and 8.")

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44. Applicant's admissions in the Background of the instant Application (see also the relevant prior art as described in the attached web page) indicate that the invention as herein disclosed was *commercially available* at least as early as 29 June 1999 and therefore "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States." 35 U.S.C. Section 102(b). In addition, the general features of this claim are described in Dewan, an article that addresses the specific purpose of the instant invention: "Workflow Optimization through Task Redesign..." Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to incorporate the teachings of Dewan with those of Applicant's prior art because since each approach improves the efficiency of workflow management systems, and it is therefore reasonable to conclude that incorporating both teachings into a single invention would further improve the efficiency of workflow management systems.

45. For purposes of the examination of claim 10, Examiner interprets the terms *work items selectable* to mean work items that a participant is capable of performing.

**Claim 10:**

46. Applicant and Dewan, as shown, disclose and/or describe the following limitations:

*A workflow engine according to claim 8, wherein*

- *when there are multiple work items selectable for a certain node, if routes determined for respective work items have no inclusion relationship with one another, said consolidation range determining means determines common part of the routes as the consolidation range* (See the rejection of claim 9 above).

47. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deborin/Dewan (*Workflow Redesign...*) as applied to claim 8 above.

**Claim 11:**

48. Deborin, as shown, discloses and/or describes the following limitation:

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- *A workflow engine according to claim 8, wherein said access permission setting means sets the highest level of access permission of the participant to each field defined on the form for each node as the access permission* (See Deborin page 21: "Clients are also responsible for giving users access to the workflow management system, that is, access work items, access running processes, and monitor processes.") *upon consolidation.*

49. Deborin does not specifically address the setting of access permissions *upon consolidation*; however, Dewan as shown describes the consolidation of tasks (nodes) as further noted in the rejection of claim 5 that describes the *consolidation means* and *consolidated information*. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the teachings of Deborin pertaining to access permission setting means in the workflow management system described therein with the teachings of Dewan and the notion of task consolidation. Such combination would thereby improve the workflow efficiency (consolidation) while at the same time maintaining an efficient and effective level of data access security (permission setting).

**Claim 12:**

50. Deborin, as shown, *et al.* discloses and/or describes the following limitations:

- *A workflow process consolidation method for consolidating work items for each of multiple nodes assigned in a workflow to one participant operating a computer terminal connected to a network, said method comprising the steps of* (See the rejection of claim 5):

51. Deborin does not specifically show the following limitations, but Dewan as shown does:

- *determining the range of consolidating multiple consecutive nodes to be processed by the participant based on a workflow definition stored in a storage device* (See rejection of claim 5);
- *acquiring work items selectable for each node within the determined consolidation range from the workflow definition stored in the storage device* (See the rejection of claim 5); *and*
- *consolidating the acquired selectable work items* (See the rejection of claim 5),

52. Deborin further discloses and/or describes the following limitations:

- *generating consolidated information* (See the rejection of claim 8), *and*

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- *providing the participant with the consolidated information through the network* (See the rejection of claim 8).

53. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the steps of the prior art as described, the selectable work acquiring means, the form generating and sending means as described because the acquisition of work items in a consolidated set of tasks and sending such consolidated tasks to participants in a workflow improves the functionality and efficiency of an effective workflow management system.

54. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deborin/Dewan (*Workflow Redesign...*) as applied to claim 12 above and further in view of Applicant's admissions.

**Claim 13:**

- *A workflow process consolidation method according to claim 12, wherein when there are multiple work items selectable for a certain node, some routes in all the routes determined for respective work items, which are contained in one route, or common part of all the routes is determined in said consolidation range determining step as the consolidation range* (See the rejection of claims 9 and 10).

55. Applicant's admissions in the Background of the instant Application (see also the relevant prior art as described in the accompanied web page) indicate that the invention as herein disclosed was *commercially available* at least as early as 29 June 19 and therefore "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States." 35 U.S.C. Section 102(b). In addition, the general features of this claim are described in two articles by Dewan, articles that address the specific purpose of the instant invention, one of which is entitled: "Workflow Optimization through Task Redesign..." Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to incorporate the teachings of Dewan with those of Applicant's prior art because both approaches improve the efficiency of workflow management systems.

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56. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deborin/Dewan (*Workflow Redesign...*) as applied to claims 12 and 13 above.

**Claim 14:**

57. Deborin, as shown, discloses and/or describes the following limitation:

*A workflow process consolidation method according to claim 12 further comprising the steps of:*

- *determining the highest level of access permission to each field within the consolidation range from the workflow definition stored in the storage device (See the rejection of the limitation in claim 11 A workflow engine...); and*
- *acquiring the layout definition of a form to be provided to the participant from the workflow definition wherein a form as consolidation information is generated in said consolidation information providing step based on the access permission and the layout definition (See the rejection of claim 7).*

58. Deborin does not specifically address the setting of access permissions *upon consolidation*; however, Dewan as shown describes the consolidation of tasks (nodes) as further noted in the rejection of claim 5 that describes the *consolidation means* and *consolidated information*. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the teachings of Deborin pertaining to access permission setting means in the Workflow Management System described therein with the teachings of Dewan and the notion of task consolidation. Such combination would thereby improve the workflow efficiency (consolidation) while at the same time maintaining an efficient and effective level of data access security (permission setting).

59. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deborin/Dewan (*Workflow Redesign...*) as applied to claim 12 above.

**Claim 15:**

*A workflow process consolidation method according to claim 12 further comprising the steps of:*

- *receiving results of work performed by the participant on the consolidated information; and*



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- *storing in the storage device the participant's inputted field values and the participant's selected work from the received results of work* (Deborin describes in detail many elements of workflow management systems and describes client/server architectures as they pertain to workflow management systems).

60. Examiner notes that such systems involve the steps of receiving and storing information as disclosed. Further, Deborin page 248 describes work where steps "Consolidate Tasks performed by the same role into a single activity" and thus addresses *work performed on the consolidated information*. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the teachings of Deborin with that of Dewan because incorporating the use and function of consolidated information in the client/server workflow management system described in Deborin would enhance the efficiency and functionality of workflow management systems.

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### **Conclusion**

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to Dr. **Mark A. Fleischer** whose telephone number is **571.270.3925**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **James A. Reagan** whose telephone number is **571.272.6710** may be contacted.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> <<http://pair-direct.uspto.gov>>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

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Mark A. Fleischer, Ph.D. December 14, 2007

/Mark A Fleischer/ Examiner, Art Unit 4143

/James A. Reagan/Supervisory Patent Examiner, Art Unit 4143